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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

KAO, CHIH CHENG G

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 01/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/629,810

Applicant(s)

BRAUN

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,5,7-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,5,7-13 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 02 April 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2, 7, and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holzapfel et al. (US Patent 6392224) in view of Braun (US Patent 5508088) and Shelandar (US Patent 4899048).

Holzapfel et al. discloses a positioning device (title) comprising a device (Fig. 1, #9) having at least one code track of a group with mutually constant spacing (Fig. 1, #8b) with at least one higher-order code marking overlapping therewith (Fig. 1, #8a), wherein the at least one higher-order code track has a different optical density compared to the first group (col. 5, lines 1-5), whereas the code markings of the at least one higher-order group have a arbitrary spacing for controlling different functions from at least one of the purposes of controlling a start position, controlling an end position, calibrating, determining an absolute position (col. 5, lines 10-15), a signal processing device (Fig. 1, #3), a light source (Fig. 1, #4), a light sensitive sensing device (Fig. 1, #6), wherein the code markings have a detectable grading for generating position signals (Fig. 2b and 2a), and wherein the code markings have a predefined difference in optical density levels (col. 5, lines 1-5), .

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However, Holzapfel et al. does not seem to specifically disclose a “timing” device, a single sensor-emitter unit, the code markings having different degrees of reflectivity, and an LED or phototransistor.

Braun teaches a “timing” device (Title), a single sensor-emitter unit (Fig. 1b, #12a and 14a), and code markings have different degrees of reflectivity (Fig. 1b and Fig. 3, #25 and 27). Shelander teaches an LED and phototransistor (Fig. 1, “LED” and “phototransistor”)

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have a timing device, single sensor-emitter unit, and reflectivity of Braun with the device of Holzapfel et al., since one would be motivated to have a timing device for controlling machine tools, handling equipment or other servo-mechanical elements as suggested by Braun (Abstract, lines 1-2), and since one would be motivated to have a single sensor-emitter unit and reflectivity for a simpler design as implied from Braun (col. 1, lines 53-67).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the LED and phototransistor of Shelander with the device of Holzapfel et al. in view of Braun, since these components are considered conventional in the art as shown by Shelander (Fig. 1, “Prior Art”), and would have been within routine skill for one having ordinary skill in the art to substitute an LED or phototransistor as the light source or light sensitive sensing device. One would be motivated to use an LED or phototransistor to keep the device as small as possible as seen in the figures.

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2. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holzapfel et al. in view of Braun as applied to claim 10, and further in view of Norton et al. (US Patent 6140636).

Holzapfel et al. in view of Braun suggests a device as recited above.

However, Holzapfel et al. does not seem to specifically disclose two-channel or multi-channel evaluation.

Norton et al. teaches two-channel or multi-channel evaluation (col. 3, lines 17-25).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the two-channel evaluation of Norton et al. with the device of Holzapfel et al. in view of Braun, since one would be motivated to provide information regarding direction of motion, speed and absolute position, but at a lower cost than a three-channel encoder as shown by Norton et al. (col. 2, lines 45-50).

3. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holzapfel et al. in view of Braun as applied to claim 7, and further in view of Babsch et al. (US Patent 4673810) and Ishizuka et al. (US Patent 5129725).

Holzapfel et al. in view of Braun suggests a device as recited above.

However, Holzapfel et al. does not seem to specifically disclose gray levels.

Babsch et al. teaches gray levels (col. 3, lines 59). Ishizuka et al. teaches gray levels (col. 15, lines 34-44).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the gray levels of Babsch et al. or Ishizuka et al. with the device of

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Holzäpfel et al. in view of Braun, since translucent (gray levels) and transparent are functionally equivalent structures known in the art as shown by Babsch et al. (col. 3, lines 59). One of ordinary skill in the art would have found it obvious to substitute translucent (gray levels) for transparent markings. One would be motivated to have translucent markings to insure a signal coming from the signal to the detector as opposed to the opaque markings as demonstrated by the figures in Babsch et al. or Ishizuka et al.

Response to Arguments

4. The claim objections from the action mailed 7/3/02 have been withdrawn.
5. Applicant's arguments filed 10/24/02 have been fully considered but they are not persuasive.

With regards to Holzäpfel et al., the opaque/transparent differentiation can be viewed as the groups of code markings having a detectable gradation of optical density levels in its broadest interpretation.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



gk
December 30, 2002


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